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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,996	02/07/2001	Konstantinos I. Papathomas	END920000065US1	8725

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09/08/2005

Jack Friedman
Schmelser, Olsen & Watts
3 Lear Jet Lane
Suite 201
Latham, NY 12110

EXAMINER

SELLERS, ROBERT E

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/778,996

Applicant(s)

PAPATHOMAS, KONSTANTINOS
I.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,14,18,37,41,43,44,46,47 and new claims 51-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,14,18,37,41,43,44,46,47 and 51-86 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This application has been transferred due to the departure of Examiner Keehan. The limitations to the previously pending claims as well as new claims 51-86 presented in the amendment filed July 5, 2005 are supported as conveniently indicated in Table 1 on page 14 of the Remarks section. Due to the introduction of underfilling method steps in claim 47 and the breadth of the new subject matter denoted in 36 new claims, the following restriction and election of species is proposed.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1, 14, 18, 37, 41, 43, 44, 46 and 51-86, drawn to an encapsulant composition, an electronic package (independent claim 18) and a method of making an encapsulant composition (independent claim 41), classified in class 257, subclass 787.
- II. Claim 47, drawn to a method of making an encapsulant further comprising the steps of underfilling, pregelling and curing, classified in class 438, subclass 127.

The inventions are distinct from each other because:

3. The encapsulant composition is usefull other than to underfill the gap between a substrate and a semiconductor chip, such as a process of adhering two substrates. The additional underfilling, pregelling and curing steps of Group II are materially different manipulations of the encapsulant composition other than the mere blending steps defined in independent claim 41.

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Restriction for examination purposes as indicated is proper because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification.

4. Claims 1, 14, 18, 37, 41, 43, 44, 46, 47 and 51-86 generic to a plurality of disclosed patentably distinct species comprising:

a) The resin materials such as an epoxy resin or cyanate ester, wherein if an epoxy resin is elected, a particular chemical name and/or structure is identified from page 7, line 23 to page 13, line 21, such as the particularly important glycidyl ethers of bisphenol A described in the specification on page 11, lines 23-25. If a cyanate ester is elected, a particular chemical name and/or structure must be revealed such as either bisphenol AD disyanate [sic] (4,4'-ethylidenebisphenoldicyanate, Arocy L-10), hexafluorobisphenol A dicyanate (Arocy 40S), or bisphenol M dicyanate (RTX366).

b) The flexibilizing agents disclosed on page 16, line 15 to page 20, line 17. The chemical name and/or structure of the particular flexibilizing agent must be presented since the extreme breadth of the myriad structurally distinct species involves multiple diverse classifications and, therefore, numerous burdensome searches.

c) The spherical or spheroidal fillers wherein a single species is selected from page 20, line 29 to page 21, line 4.

d) The the presence of absence of the layer of coupling agent on the spherical or spheroidal particles of claims 14, 37 and 46, wherein if its presence is elected, a particular species is revealed from page 21, lines 18-22.

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e) The presence or absence of the surfactant of claims 58, 70 and 82, wherein if its presence is elected, a particular species is identified from page 22, lines 23-25 such as Triton X-100.

f) The presence or absence of the organic dye of claims 60, 72 and 84, wherein if its presence is elected, a particular species is elected from either nigrosine or Orasol blue GN set forth on page 22, line 29.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species ***within each if items a), b), c) d), e) and f)***, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

The reply to this requirement to be complete must include an election of the invention and species to be examined even though the requirement be traversed (37 CFR 1.143).

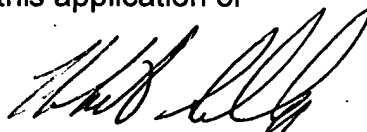
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A search of the inventor unearths the ensuing references deemed to be relevant.

5. Papathomas et al. Patent No. 5,194,930 (col. 4, lines 5-23; col. 12, lines 43-58; cols. 15-16, claim 5) claims and discloses an encapsulant prepared from a cycloaliphatic diepoxide, as little as about 5% by weight of a polyol flexibilizer, a filler and a surfactant.
6. Papathomas et al. Patent No. 6,790,473 (col. 6, lines 52-54; col. 17, lines 1-16 and line 50 to col. 20, line 10) sets forth an encapsulant obtained from an epoxy resin and/or a cyanate ester, a filler (col. 17, lines 10-16); a silane surface treating agent (col. 17, lines 1-9), a surfactant (col. 16, lines 56-63) and a toughening agent, all described in the same language utilized in the instant application.
7. Johansson Patent No. 6,090,474 (col. 10, lines 39-66) is directed to an encapsulant comprising an epoxy resin, as little as 5% by weight of a flexibilizer, a filler such as spherical silica (cols. 14-15, Example 4) and a surfactant (col. 10, lines 35-38).
8. Johansson et al. Patent No. 6,794,040 (col. 10, lines 36-62) espouses an encapsulant derived from an epoxy resin, as little as 5% by weight of a flexibilizer, a filler such as spherical silica (col. 14, Example 4, line 64) and a surfactant (col. 10, lines 30-34).

The effective filing dates of the aforementioned references antedate the filing date of the instant application of February 7, 2001.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.
rs 8/30/2005



ROBERT E.L. SELLERS
PRIMARY EXAMINER